

Ch 6 Quadratic Functions and Inequalities

6.1 Graphing Quad. Fn.s

$$f(x) = ax^2 + bx + c$$

$$a \neq 0$$

parabola

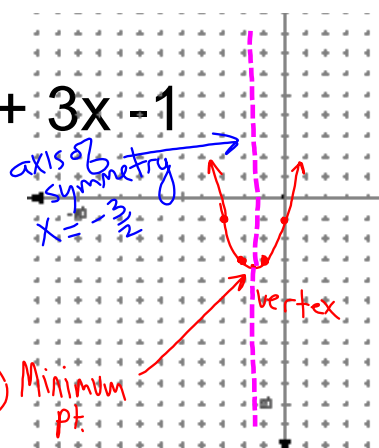


ex 1:

$$f(x) = x^2 + 3x - 1$$

x	f(x)
-3	-1
-2	-3
-1	-3
0	-1
$-\frac{3}{2}$	$-\frac{13}{4} = -3\frac{1}{4}$

$\frac{9}{4} - \frac{9}{2} - 1$



$$\text{Vertex } \left(\frac{-b}{2a}, \right)$$

Equation of axis of symmetry

$$x = -\frac{b}{2a}$$

y-intercept $(0, c)$

ex:2

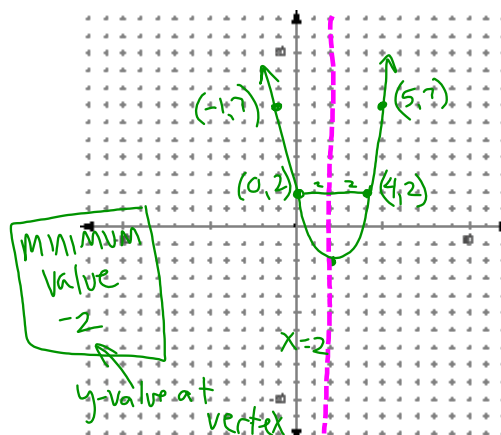
$$f(x) = x^2 - 4x + 2$$

$$V(2, -2) \quad -\frac{b}{2a} \quad \frac{4}{2(1)}$$

$$a.o.s. \quad x = 2$$

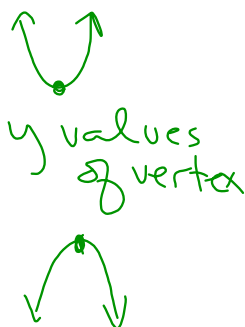
$$y\text{-int } (0, 2) \quad \text{mirrored pt. } (4, 2)$$

$$(-1, 7) \quad \text{mirrored pt } (5, 7)$$



Minimum pt

Maximum pt



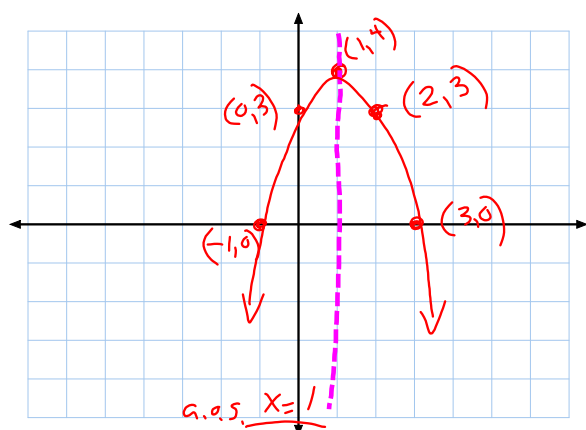
$$\text{Do } -1 + 2(1) + 3$$

$$f(x) = -x^2 + 2x + 3$$

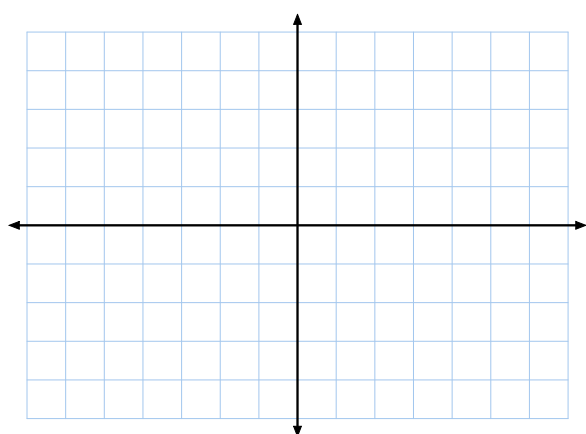
Does this parabola have (max) or min?

What is it? (4)

$$V(1, 4) \quad -\frac{2}{2(-1)} = 1$$



ex: $f(x) = x^2 - 4x + 4$



HW

p291

~~17-27~~ odd *14-22 even*

33-38